IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Appellant:

Yoshiaki SAKAGAMI, *et al.* Appeal No.:

Serial Number: 10/814,343 Group Art Unit: 2624

Filed: April 1, 2004 Examiner: Elisa M. Rice

For: IMAGE TRANSMISSION SYSTEM FOR A MOBILE ROBOT

AMENDED BRIEF ON APPEAL

August 3, 2009

INTRODUCTION

This is an appeal from the final rejection set forth in an Official Action dated October 30, 2008, finally rejecting claims 1-8, all of the claims pending in this application. In particular, claim 1 was rejected under 35 USC § 103(a) as being unpatentable over Higaki (U.S. Patent Publication No. 2004/0028260 A1) in view of Kuno (U.S. Patent No. 5,802,494). Claims 2, 4, 5, 6, and 7 were similarly rejected under 35 USC § 103(a) as being unpatentable over Higaki in view of Kuno. Claim 3 was rejected under 35 USC § 103(a) as being unpatentable over the combination of Higaki and Kuno, and further in view of Shinichi (Japanese Patent Publication No. 2000-326274). Claim 4 was rejected under 35 USC § 103(a) as being unpatentable over Higaki and Kuno, and further in view of Ishii (U.S. Patent No. 6,278,904). Claim 8 was rejected under 35 USC § 103(a) as being unpatentable over Higaki and Kuno. A Notice of Appeal was timely filed on January 29, 2009 with a Pre-Appeal Brief Request for Review. A Notice of Panel Decision was mailed on March 10, 2009, indicating that there was at least one actual issue for appeal,

and the application would proceed to the Board of Patent Appeals and Interferences. This Appeal Brief is being timely filed.

I. REAL PARTY IN INTEREST

The real party in interest in this application is Honda Motor Co., Ltd.

II. STATEMENT OF RELATED APPEALS AND INTERFERENCES - 37 CFR 41.37(c)(1)(ii)

There are no known related applications, patents, judicial proceedings, appeals, and/or interferences that are related to, will directly effect, be directly effected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-8, all of the claims pending in the present application, were rejected; their respective rejections are the subject of this appeal. See Section VI ("Grounds of Rejection"), below, for a detailed listing of the various grounds of rejection.

IV. STATUS OF AMENDMENTS

All of claims 1-8 stand as they were previously presented prior to the final Office Action of October 30, 2008. No amendments have been submitted or entered since that time. Thus, claims 1-8 are pending and the respective rejections of claims 1-8 are appealed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following is a concise explanation of the subject matter defined in each of the independent claims and the separately argued dependent claims, as required by 37 CFR 41.37(c)(1)(v).

Claim 1, upon which claims 2-8 depend, is directed to an image transmission system for a mobile robot (*See, for example,* FIG. 1, page 4, line 20, to page 5 line 17). The system includes a camera for capturing an image as an image signal (*See, for example,* page 4, line 24, to page 5, line 1). The system also includes a microphone for capturing sound as a sound signal (*See, for example,* page 5, line 2, and page 6, lines 7-8). Human detecting means is included in the system for detecting a human from the captured image and/or sound (*See, for example,* page 5, lines 3-8, and lines 12-13; and page 6, lines 7-17). The system includes a power drive unit for moving the entire robot toward the detected human (*See, for example,* page 5, line 9 and lines 15-17). The system also includes image cut out means for cutting out an image of the detected human according to information from the camera (*See, for example,* page 5, lines 6-8 and lines 18-24). Image transmitting means is included in the system for transmitting the cut out human image to an external terminal (*See, for example,* page 7, lines 6-10). The human detecting means comprises means for detecting a moving object as a human from the image signal obtained from the camera (*See, for example,* page 7, lines 9-10). The human detecting means also comprises means for extracting an outline of the moving object (*See, for example,* page 7, lines 11-19, and FIGS. 4a-4b), and means for

extracting a face inside the outline of the moving object (*See, for example,* FIG. 5, page 7, line 20, to page 8, line 20; and page 10, lines 1-18). The human detecting means comprises means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object (*See, for example,* page 10, lines 1-13; and page 11, lines 13-18). The human detecting means further comprises means for recognizing a gesture and/or posture of a human based on a positional relationship between the face and the hand (*See, for example,* page 11, lines 19-24), and means for detecting a human according to the gesture and/or posture (*See, for example,* page 11, line 25, to page 12, line 10).

Claim 2 is directed to an image transmission system according to claim 1, wherein the system is adapted to determine that the moving object is a human from color information of the moving object. (*See, for example,* FIGS. 4a-4b, page 7, lines 11-19 and page 9, lines 16-19).

Claim 3 is directed to an image transmission system according to claim 1, wherein the system is adapted to determine a direction of a sound source from the sound signal obtained from the microphone. (*See, for example,* FIG. 2, page 6, lines 7-17).

Claim 4 is directed to an image transmission system according to claim 1, further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out human image. (*See, for example,* FIG. 5, page 7, line 20, to page 8, line 14).

Claim 5 is directed to an image transmission system according to claim 1, wherein the system is adapted to have the robot direct the camera toward the position of the detected human. (*See, for example,* FIG. 9, page 11, lines 3-10).

Claim 6 is directed to an image transmission system according to claim 1, wherein the system further comprises means for measuring a distance to the detected human according to the information from the camera, and providing a target of a movement to said mobile robot. (*See, for example,* FIG. 5, page 8, line 20, to page 9, line 10).

Claim 7 is directed to an image transmission system according to claim 1, wherein the image cut out means cuts out a portion of the image so that the portion of the image includes an image of the detected human, and the image transmitting means transmits only the cut out portion of the image to the external terminal. (*See, for example,* FIG. 5, page 9, lines 16-19, and FIG. 6, page 9, lines 20-25, and page 10, lines 19-24).

Claim 8 is directed to an image transmission system according to claim 7, wherein the image cut out means cuts out the portion of the captured image so that the portion of the image includes a face image of the detected human wherein the face image of the detected human occupies a substantially entire area of the cut out portion of the image. (*See, for example,* FIG. 8, page 10, lines 19-25, to page 11, lines 1-9).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues on appeal are whether claim 1 is obvious under 35 USC § 103(a) as being unpatentable over Higaki (U.S. Patent Publication No. 2004/0028260 A1) in view of Kuno (U.S. Patent No. 5,802,494). Another issue on appeal is whether claims 2, 4, 5, 6, and 7 are obvious under 35 USC § 103(a) as being unpatentable over Higaki in view of Kuno. A further issue on appeal is whether claim 3 is obvious under 35 USC § 103(a) over the combination of Higaki and Kuno, and further in view of Shinichi (Japanese Patent Publication No. 2000-326274). Another issue on appeal is whether claim 4 is obvious under 35 USC § 103(a) over Higaki and Kuno, and further in view of Ishii (U.S. Patent No. 6,278,904). Another issue on appeal is whether claim 8 is obvious under 35 USC § 103(a) over Higaki and Kuno. As will be discussed below, this Appeal Brief will show that these rejections should be withdrawn, and this application passed to issue.

VII. APPELLANT'S ARGUMENTS

Appellants respectfully submit that each of pending claims 1-8 recites subject matter that is not taught, disclosed, or suggested by the cited art. Each of the claims is being argued separately, and thus, each of the claims stands or falls alone.

A. Claim 1 is novel in view of Higaki and Kuno

Claim 1, upon which claims 2-8 depend, is directed to an image transmission system for a mobile robot, including a camera for capturing an image as an image signal, and a microphone for capturing sound as a sound signal. The system includes human detecting means for detecting a human from the captured image and/or sound, and a power drive unit for moving the entire robot toward the detected human. The system also includes image cut out means for cutting out an image of the detected human according to information from the camera, and image transmitting means for transmitting the cut out human image to an external terminal. The human detecting means includes means for detecting a moving object as a human from the image signal obtained from the camera, and means for extracting an outline of the moving object. The human detecting means includes means for extracting a face inside the outline of the moving object, and means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object. The human detecting means further includes means for recognizing a gesture and/or posture of a human based on a positional relationship between the face and the hand, and means for detecting a human according to the gesture and/or posture.

Appellants respectfully submit that the combination of Higaki and Kuno fails to

disclose or suggest all of the elements of claim 1.

As provided in the Declaration under 37 CFR § 1.131 submitted with the Response filed on January 7, 2008 and the Declaration under 37 CFR § 1.131 submitted with the Response filed on July 8, 2008, the subject matter of the present application corresponds to the subject matter described in Japanese patent application No. 2003-094171 filed on March 31, 2003 in Japan, a WTO member country. The Appellants had the intent to file the U.S. Patent application and claim priority rights under the Paris Convention under 35 U.S.C. § 119(a) as evidence by a first order letter to Oshima & Narushima of January 8, 2004. A copy of the first order letter was attached to the Declaration under 37 CFR § 1.131 filed on January 7, 2008.

On March 4, 2004, an order letter was sent from Oshima & Narushima to the law firm of Squire Sanders & Dempsey LLP, instructing Squire Sanders & Dempsey to prepare and file the application in the United States by March 31, 2004, claiming benefit of the Japanese priority filing date. However, this letter was contained in a package containing several filing orders which had been sent to Squire Sanders & Dempsey, and it was not until April 1, 2004, that this application was noticed among the several patent applications. In the normal course, the order letter was erroneously placed with another application that was in the package. Immediately upon discovery of the clerical error, the subject U.S. application was immediately filed on April 1, 2004. There was a clerical error that resulted in the application being filed one day late. A clerical error resulting in a one-day delay is not evidence of a lack of diligence.

Higaki was filed on August 7, 2003, and published on February 12, 2004. The filing of Japanese Patent Application No. 2003-094171 on March 31, 2003, clearly

establishes conception of the invention prior to the effective date of Higaki. Diligence was exercised from prior to the effective date of Higaki until the filing date of the present application on April 1, 2004. A mistake in failing to identify the order letter in a stack of paper for a short period of time does not constitute evidence of a lack of diligence. Quite to the contrary, the filing of the application in Japan, the order letters from the Appellants to their Japanese attorney, the order letter from the Japanese attorney to the U.S. attorney, and the actual filing of the application effectively show that Appellants intended to claim the benefit of the earlier filing date under 35 USC § 119(a), and acted diligently to file the U.S. patent application.

In the Office Action, it was contended that the Declaration filed on July 8, 2008 was ineffective to overcome Higaki because the Appellants failed to show due diligence. However, Appellants respectfully submit that missing of the Paris Convention deadline by one day is not evidence of due diligence. This is evidence of a clerical error. Appellants are not asserting a claim for priority in the Declaration of January 7, 2008, the Declaration of July 8, 2008, or in this Appeal. Appellants presented the Declarations and the Responses in an effort to show that Appellants acted diligently to reduce the invention to practice through the filing of a United States patent application based upon Japanese Patent Application No. 2003-094171. The missing of the priority deadline by one day is not evidence of a lack of diligence. The attempt in the Office Action to connect the Paris Convention deadline to due diligence is a clear legal and factual error.

Under U.S. patent practice, a patentee must account for the entire critical period between the date of conception and the date of reduction to practice by showing either activity aimed at reduction to practice or legally adequate excuses for inactivity. The

order letters to the Japanese and U.S. attorneys, and the filing date of April 1, 2004, is clearly evidence of due diligence. The commission of a clerical error does not "undo" all of the diligence which took place.

Furthermore, Appellants respectfully submit that the difference between conception/due diligence and a claim for priority has been confused. The cases that are relied upon in the Office Action to formulate the conclusion that due diligence was not shown are cases in which the applicant did not show any intent to seek patent protection and did not demonstrate continuous activities in the development of the invention from conception to the reduction of the invention to practice (e.g., filing of an application).

In the Responses filed on January 7, 2008 and July 8, 2008, Appellants clearly set forth that a claim for priority was not being asserted. Rather, Appellants were clearly submitting that the filing of the application in Japan, the order letter from the Appellants requesting that a U.S. Paris Convention application be filed, and the actual filing of the application at the USPTO, effectively show that the Appellants acted diligently to reduce the invention to practice. Therefore, the filing of Japanese Patent Application No. 2003-094171 corresponding to the present application, establishes conception of the invention prior to the effective date of Higaki, coupled with diligence from prior to the effective date of Higaki until the filing date (constructive reduction to practice) of U.S. Patent Application Serial No. 10/814,343.

Appellants respectfully provide that in order to show due diligence in the inventor's reduction to practice, "the patentee must account for the entire critical period between the date of conception and the date of reduction to practice by showing either activity aimed at reduction to practice or legally adequate excuses for inactivity." 3 D. Chisum, Patents

§ 10.07 (1987). "In addition, the law requires corroboration of diligence during the critical period." *American Standard Inc. v. Pfizer, Inc.*, 722 F. Supp. 86, 109 (D.Del. 1989). The "critical period" of diligence is "from the time just before the entry of a second inventor into the field until a reduction to practice." *American Standard Inc.*, 722 F. Supp. at 114; *Driscoll v. Cebalo*, 5 U.S.P.Q.2d 1477, 1481 n. 6 (P.T.O. 1982). Furthermore, "the law requires corroboration of diligence during the critical period." *American Standard Inc.*, 722 F. Supp. at 109.

Matters which may be properly considered in reaching a conclusion as to whether an applicant for a patent has exercised reasonable diligence in filing his application where delay has occurred were stated to the following effect by the Court of Appeals for the District of Columbia in the case of *Callaghan v. Couverneur et al.*, 54 App.D.C. 140, 143, 295 F. 961, 964: 'It has been held in cases of this character that there is no arbitrary rule or standard by which diligence may be measured, but each case must be considered and decided in the light of the circumstances of that case; also, that the nature of the invention, the situation of the inventor, the length of time intervening between conception and reduction to practice, the character and reasonableness of the inventor's testimony and that of his witnesses, are all important factors in determining the question of diligence. *Woods v. Poor*, 29 D.C.App. 397; *Sargent v. Vetter*, 48 App.D.C. 582. It has been said that such diligence does not require uninterrupted effort, nor the concentration of all the applicant's energies upon the single enterprise; that the health, the means, the liberty of the inventor are proper subjects for consideration in this regard; and that the law looks with indulgence upon the delays which arise from the circumstances of parties who may make an invention. *Dickinson v. Swinehart*, 49 App.D.C. 222, (263 F. 474); *Courson*

v. O'Connor, 227 F. 890, 142 C.C.A. 414; Robinson on Patents, vol. 1, p. 547.'

Appellants respectfully disagree with the Examiner's interpretation of the facts included in the Declaration filed on January 7, 2008 and in the Declaration filed on July 8, 2008. Appellants respectfully submit that the holding of the previously cited cases clearly support a finding that, the filing of Japanese Patent Application No. 2003-094171 corresponding to the present application establish conception of the invention prior to the effective date of Higaki coupled with diligence from prior the effective date of Higaki until the filing date (constructive reduction to practice) of U.S. Patent Application Serial No. 10/814,343. Also, the Office Action failed to appreciate the differences between a claim for priority and first to conceive and reduce to practice coupled with due diligence.

Accordingly, Appellants respectfully request that Higaki be excluded from being used to reject the present application. Because the rejections cannot stand without Higaki, it is respectfully requested that the rejections be withdrawn.

For the reasons explained above, it is respectfully submitted that the rejection of claim 1 is moot because Higaki may not be used as prior art against the present application and because Kuno fails to teach or suggest all the recitations of independent claim 1.

Specifically, Kuno does not teach or suggest, at least, "a power drive unit for moving the entire robot toward the detected human," as recited in independent claim 1. Rather, from the description and figures provided in Kuno, a robot 5 is positioned in front of or next to the patient so the facial features may be detected and monitored. Column 24, from line 6, of Kuno describes that the robot 5 can move its arms and hands, touching the bed or the subject. Nothing in column 24 provides that the robot 5 has a driving

mechanism to move the entire robot toward the detected human. The robot 5 of Kuno must be manually placed by a human in front of the patient.

Furthermore, in step c1 of Kuno, pixels which may represent part of the subject's head are extracted. See column 8, lines 17-26. In other words, the pixels are distinguished from those representing the pillow, bed sheet and blanket. If the video camera 31a incorporated in the robot 5 is a color camera, the pixels of skin color and hair color are extracted from the pixels of other colors. If the camera 31a is a monochrome one, the pixels showing part of the **subject's head are distinguished** from those representing the bedding, in accordance with the brightness or texture of pixels. (Emphasis added) Therefore, Kuno processes the pixels of skin color and hair to be able to distinguish the patient's head, not to detect the position of the patient's hand. Specifically, Kuno fails to teach or suggest, at least, "means for detecting **a position of a hand** by searching for a skin color area **other than the face** inside the outline of the moving object," emphasis added, as recited in independent claim 1. Based "on a **positional relationship between the face and the hand**," independent claim 1 provides "means for recognizing a gesture and/or posture of a human." (Emphasis added) Such feature is not taught or suggested in Kuno. Kuno does not teach or suggest a determination of a positional relationship between the face and the hand, where the position of the hand is detected by searching the skin color area. Rather, Kuno provides that the robot 5 detects the head of the patient and if the patient has moved from the bed. See column 9, lines 50-53. The robot 5 can also analyze the face features of the patient to determine if the subject is facing or facing away from the camera (See column 13, lines

1-9) and is demonstrating an abnormal feature (See column 14, lines 24-39). Therefore, the description of Kuno cannot be used to teach all of the features recited in independent claim 1.

Accordingly, it is respectfully asserted that Kuno fails to teach or suggest all the recitations of independent claim 1. It is respectfully requested that the rejection to the claims be withdrawn.

As such, Appellant respectfully requests that the rejection of claim 1 be reversed and the claim be allowed.

B. Claims 2, 4, 5, 6, and 7 are novel in view of Higaki and Kuno

i. Claim 2

Claim 2 depends from claim 1 and further limits claim 1. Furthermore, claim 2 recites, "wherein the system is adapted to determine that the moving object is a human from color information of the moving object." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 2 be reversed.

ii. Claim 4

Claim 4 depends from claim 1 and further limits claim 1. Furthermore, claim 4 recites, "further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out human image." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 4 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 4 be reversed.

iii. Claim 5

Claim 5 depends from claim 1 and further limits claim 1. Furthermore, claim 5 recites, "wherein the system is adapted to have the robot direct the camera toward the position of the detected human." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without

Higaki, it is respectfully requested that the rejection to claim 5 be reversed.

iv. Claim 6

Claim 6 depends from claim 1 and further limits claim 1. Furthermore, claim 6 recites, "wherein the system further comprises means for measuring a distance to the detected human according to the information from the camera, and providing a target of a movement to said mobile robot." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 6 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 6 be reversed.

v. Claim 7

Claim 7 depends from claim 1 and further limits claim 1. Furthermore, claim 7 recites, "wherein the image cut out means cuts out a portion of the image so that the portion of the image includes an image of the detected human, and the image transmitting means transmits only the cut out portion of the image to the external terminal." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability

of independent claim 7 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 7 be reversed.

C. Claim 3 is novel in view of Higaki and Kuno and further in view of Shinichi

Claim 3 depends from claim 1 and further limits claim 1. Furthermore, claim 3 recites, "wherein the system is adapted to determine a direction of a sound source from the sound signal obtained from the microphone." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 3 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declarations under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application.

Shinichi generally describes an acting robot in which an image input device 1 inputs an image of one of cameras of a stereo-camera to a man detecting device 2, and inputs the images of both cameras to a distance calculating device 3. The man detecting device 2 detects a man by image processing, and extracts a face area of the man to follow up the face area thereafter. A man distinguishing device refers the information on an image of the man stored in a man information storing part 5, and a voice input device 6 consists of three microphones attached to a body, and outputs the inputs to a voice

source direction detecting device 7. An obstacle detecting device 10 calculates a distance value to an obstacle of every ultrasonic wave sensor 9 and holds the same, and a touch sensor 11 distinguishes a rubbed state and a tapped state and outputs the same.

However, Shinichi does not cure the deficiencies of Kuno. Similarly to Kuno, Shinichi does not teach or suggest, at least "a power drive unit for moving the entire robot toward the detected human," as recited in independent claim 1. Rather, from the description and figures provided in Shinichi, the image input device 1 inputs the image of one of cameras of a stereo-camera to a man detecting device 2, and inputs the images of both cameras to a distance calculating device 3. Similarly to Kuno, there is no description or suggestion in Shinichi that a position of a hand is detected "by searching for a skin color area other than the face inside the outline of the moving object," as recited in independent claim 1 and that a gesture and/or posture of a human is recognized "based on a positional relationship between the face and the hand," as also recited in independent claim 1.

Accordingly, it is respectfully asserted that Kuno and Shinichi fail to teach or suggest all the recitations of independent claim 1 and related dependent claim 3. It is respectfully requested that the rejection to the claim be reversed.

D. Claim 4 is novel in view of Higaki and Kuno and further in view of Ishii

Claim 4 depends from claim 1 and further limits claim 1. Furthermore, claim 4 recites, "further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out human image." Because the combination of Higaki

and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 4 over Kuno are incorporated herein.

Also, for the reasons previously submitted in the Declarations under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application.

Ishii generally describes floating device, which allows an entire robot main body to float at a site. Mounted on the floating device are an image sensor which captures image data of persons around the robot main body. An information processing device recognizes a specified person based on the image data captured by the image sensor, calculates a position of the specified person, and outputs a control signal for moving the robot main body toward the position of the specified person.

However, Ishii is silent on how the position of a hand of the specified person is determined. Specifically, Ishii fails to teach or suggest, at least, "means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object," as recited in independent claim 1. Similarly to Kuno, Ishii is devoid of any teaching or suggestion providing the features associated with the means for detecting as recited in independent claim 1. The floating robot 10 of Ishii does not teach or suggest detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object. As a result, similarly to Kuno, a person of ordinary skill in the art will appreciate that Ishii is silent as to teaching or suggesting, "means for recognizing a gesture and/or posture of a human based on a positional

relationship between the face and the hand; and means for detecting a human according to the gesture and/or posture," as recited in independent claim 1.

Furthermore, contrary to the contentions made in the Office Action, in view of the descriptions of Kuno, a person of ordinary skill in the art would not be motivated to combine the floating device of Ishii with Kuno.

MPEP 2143.01(V) states "THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE," (Capital letters in original.) and explains that "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Moreover, MPEP 2145(III) states that "the claimed combination cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose." The proposed combination of Kuno and Ishii would change the fundamental principles of Kuno's operation, and, thus, is per se non-obvious under MPEP 2143.01(V).

It is evident that Kuno's patient monitoring system could not be configured to add a mechanism allowing a patient to float in the water and having an entire main body to float at a side as provided in Ishii. Accordingly, the proposed combination is improper, unmotivated hindsight reconstruction.

Accordingly, Appellants respectfully request that the rejection of claim 4 be reversed because the combination of Kuno and Ishii does not teach or suggest all the features of independent claim 1 and related dependent claim 4 and is per se non-obvious and because there is no proper motivation to combine the references and, thus, a prima facie case of obviousness has not been established.

E. Claim 8 is novel in view of Higaki and Kuno

Claim 8 depends from claim 1 and further limits claim 1. Furthermore, claim 8 recites, "wherein the image cut out means cuts out the portion of the captured image so that the portion of the image includes a face image of the detected human wherein the face image of the detected human occupies a substantially entire area of the cut out portion of the image." Because the combination of Higaki and Kuno must teach, individually or combined, all the recitations of the base claim and any intervening claims of the dependent claims, the arguments presented in Section VII.A supporting the patentability of independent claim 1 over Kuno are incorporated herein.

Also, for the reasons previously submitted and declared in the Declaration under 37 CFR § 1.131 filed on January 7, 2008 and July 8, 2008, Higaki must be excluded from being used to reject the present application. Because the rejection cannot stand without Higaki, it is respectfully requested that the rejection to claim 8 be reversed.

VIII. CONCLUSION

For all of the above noted reasons, it is strongly contended that certain clear differences exist between the present invention as claimed in claims 1-8 and the prior art relied upon by the Examiner. It is further contended that these differences are more than sufficient that the present invention would not have been obvious to a person having ordinary skill in the art at the time the invention was made.

This final rejection being in error, therefore, it is respectfully requested that this honorable Board of Patent Appeals and Interferences reverse the Examiner's decision in this case and indicate the allowability of application claims 1-8.

In the event that this paper is not being timely filed, the Appellants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees which may be due with respect to this paper may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,
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Enclosures: Appendix 1 - Claims on Appeal
Appendix 2 - Evidence
Appendix 3 - Related Proceedings

APPENDIX 1

CLAIMS ON APPEAL

1. (Previously Presented) An image transmission system for a mobile robot, comprising:

a camera for capturing an image as an image signal;

a microphone for capturing sound as a sound signal;

human detecting means for detecting a human from the captured image and/or sound;

a power drive unit for moving the entire robot toward the detected human;

image cut out means for cutting out an image of the detected human according to information from the camera; and

image transmitting means for transmitting the cut out human image to an external terminal,

wherein the human detecting means comprises:

means for detecting a moving object as a human from the image signal obtained from the camera;

means for extracting an outline of the moving object;

means for extracting a face inside the outline of the moving object;

means for detecting a position of a hand by searching for a skin color area other than the face inside the outline of the moving object;

means for recognizing a gesture and/or posture of a human based on a positional relationship between the face and the hand; and

means for detecting a human according to the gesture and/or posture.

2. (Previously Presented) An image transmission system according to claim 1, wherein the system is adapted to determine that the moving object is a human from color information of the moving object.

3. (Original) An image transmission system according to claim 1, wherein the system is adapted to determine a direction of a sound source from the sound signal obtained from the microphone.

4. (Original) An image transmission system according to claim 1, further comprising means for monitoring state variables including a current position of the robot; the image transmitting means transmitting the monitored state variables in addition to the cut out human image.

5. (Original) An image transmission system according to claim 1, wherein the system is adapted to have the robot direct the camera toward the position of the detected human.

6. (Original) An image transmission system according to claim 1, wherein the system further comprises means for measuring a distance to the detected human according to the information from the camera, and providing a target of a movement to said mobile robot.

7. (Previously Presented) An image transmission system according to claim 1, wherein the image cut out means cuts out a portion of the image so that the portion of the image includes an image of the detected human, and the image transmitting means transmits only the cut out portion of the image to the external terminal.

8. (Previously Presented) An image transmission system according to claim 7, wherein the image cut out means cuts out the portion of the captured image so that the portion of the image includes a face image of the detected human wherein the face image of the detected human occupies a substantially entire area of the cut out portion of the image.

APPENDIX 2

EVIDENCE APPENDIX

No evidence under section 37 C.F.R. 1.130, 1.131, or 1.132 has been entered or will be relied upon by Appellants in this appeal.

APPENDIX 3

RELATED PROCEEDINGS APPENDIX

No decisions of the Board or of any court have been identified under 37 C.F.R. §41.37(c)(1)(ii).